

AMENDMENT UNDER 37 C.F.R. § 1.111,
AMENDMENT UNDER 37 C.F.R. § 1.48(b) AND
REQUEST FOR DECLARATION OF INTERFERENCE
UNDER 37 C.F.R. § 1.607
U.S. Appl. No. 09/942,763

SiO ₂	65 to 80 percent by weight
Na ₂ O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al ₂ O ₃	0 to 5 percent by weight
K ₂ O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

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Fe ₂ O ₃ (total iron)	0.30 to 0.70 percent by weight
FeO	0.08 to 0.16 percent by weight
Co ₃ O ₄	3 to 25 PPM
Se	0.5 to 10 PPM

wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of 70 percent or greater at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

B4 3 15. (Amended) The composition as in claim 14 wherein the Fe₂O₃ concentration is from 0.45 to 0.65 weight percent, the Co₃O₄ concentration is from 8 to 20 PPM and the Se concentration is from 1 to 5 PPM.

5 18. (Amended) The composition as in claim 13 further including titanium dioxide present in an amount up to 1.5 wt. % of the glass composition.

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B5 ⁶19. (Amended) The composition as in claim ⁵18 wherein said TiO₂ is present in an amount from 0.33 to 1.0 wt. %

¹⁰23. (Amended) A neutral gray colored glass composition having a base glass portion comprising:

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SiO ₂	65 to 80 percent by weight
Na ₂ O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al ₂ O ₃	0 to 5 percent by weight
K ₂ O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

Fe ₂ O ₃ (total iron)	0.30 to 0.70 percent by weight
FeO	0.08 to 0.16 by weight
Co ₃ O ₄	3 to 25 PPM
Se	0.5 to 10 PPM
NiO	up to 50 PPM

wherein the color of the glass is characterized by a dominant wavelength in the range of less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of 70 percent or greater at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

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12-25. (Amended) The composition as in claim ¹⁰23 wherein the Fe₂O₃ concentration is from 0.45 to 0.65 weight percent, the Co₃O₄ concentration is from 8 to 20 PPM, and the Se concentration is from 1 to 5 PPM.

2935. (Amended) A neutral gray colored glass composition having a base glass portion comprising:

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SiO ₂	65 to 80 percent by weight
Na ₂ O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al ₂ O ₃	0 to 5 percent by weight
K ₂ O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

Fe ₂ O ₃ (total iron)	0.45 to 0.70 percent by weight
FeO	0.08 to 0.16 percent by weight
Co ₃ O ₄	3 to 25 PPM
Se	0.5 to 10 PPM

wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than about 8 percent, a visible light transmission of greater than 70 percent, and a direct solar heat transmission at least 12 percentage points below the visible light transmission at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

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²⁹
37. (Amended) A neutral gray colored glass composition having a base glass portion comprising:

SiO ₂	65 to 80 percent by weight
Na ₂ O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al ₂ O ₃	0 to 5 percent by weight
K ₂ O	0 to 5 percent by weight

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and a colorant portion consisting essentially of:

Fe ₂ O ₃ (total iron)	0.45 to 0.70 percent by weight
FeO	0.08 to 0.16 percent by weight
Co ₃ O ₄	3 to 25 PPM
Se	0.5 to 10 PPM

wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of greater than 70 percent at a thickness of 4 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

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39. (Amended) A neutral gray colored glass composition having a base glass portion comprising:

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SiO ₂	65 to 80 percent by weight
Na ₂ O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al ₂ O ₃	0 to 5 percent by weight
K ₂ O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

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Fe ₂ O ₃ (total iron)	greater than 0.45 up to 0.65 percent by weight
FeO	0.08 to 0.16 percent by weight
Co ₃ O ₄	3 to 25 PPM
Se	0.5 to 10 PPM
NiO	up to 50 PPM

wherein the glass has a visible light transmission luminous transmittance of greater than 70 percent at a thickness of 4.0 millimeters, and wherein the percent reduction of the total iron is between 21% and 34%.

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46. (Amended) The composition as in claim 39 wherein the Fe₂O₃ concentration is from 0.51 to 0.61 weight percent, the FeO concentration is from 0.08 to 0.14 weight percent, the Co₃O₄ concentration is from 5 to 24 PPM, the Se concentration is from 1 to 9 PPM and the NiO concentration is 15 to 31 PPM and further wherein said composition has a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.

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47. (Amended) The composition as in claim 33 wherein the Fe_2O_3 concentration is from 0.51 to 0.61 weight percent, the FeO concentration is from 0.08 to 0.14 weight percent, the Co_3O_4 concentration is from 5 to 24 PPM and the Se concentration is from 1 to 9 PPM.

Add new Claims 48-58, as follows:

35 48. An IR and UV absorbing soda-lime-silica glass of a neutral tint having, in a nominal 4 mm thickness, a visible light transmittance of at least 70%, a direct solar heat transmission at least twelve percentage points below the visible light transmittance, a dominant wavelength not greater than 560 nm and a color purity of no more than 6%, said glass on a weight basis including as essential ingredients a total iron content expressed as Fe_2O_3 from about 0.3% to 0.7%, from about 0.5 to 10 ppm Se , from about 3 to 25 ppm Co_3O_4 , 0 to 50 ppm NiO and 0 to 1.5% TiO_2 , and having a ferrous iron to total iron (as Fe_2O_3) ratio in the range of 21 to 34.

36 49. An IR and UV absorbing soda-lime-silica glass as claimed in claim 35 48, wherein said direct solar heat transmission is at least fifteen percentage points below the visible light transmittance.

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³⁷~~50~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim ³⁵~~48~~, having an ultraviolet radiation transmission less than 55%.

³⁸~~51~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim ³⁷~~50~~, wherein said ultraviolet radiation transmission is less than 50%.

⁶¹²
³⁹~~52~~. An IR and UV absorbing soda-lime-silica glass of a neutral tint having, in a nominal 4 mm thickness, a visible light transmittance of at least 70%, a direct solar heat transmission at least fifteen percentage points below the visible light transmittance, a dominant 20 wavelength not greater than 560 nm and a color purity of no more than 6%, said glass on a weight basis including as essential ingredients a total iron content expressed as Fe₂O₃ from about 0.45% to 0.65%, from about 1 to 5 ppm Se, from about 8 to 20 ppm Co₃O₄, 0 to 35 ppm NiO and 0 to 1% TiO₂, and having a ferrous iron to total iron (as Fe₂O₃) ratio in the range of 25 to 31.

⁴⁰~~53~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim ³⁹~~52~~, wherein said direct solar heat transmission is at least 20 percent points below the visible light transmittance.

⁴¹~~54~~. An IR and UV absorbing soda-lime-silica glass as claimed in claim ³⁹~~52~~, wherein said color purity is no more than 5%.

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⁴²
55. An IR and UV absorbing soda-lime-silica glass as claimed in claim ³⁹~~52~~, wherein
said color purity is no more than 3%.

⁴³
56. An IR and UV absorbing soda-lime-silica glass as claimed in claim ³⁹~~52~~, having an
ultraviolet radiation transmission less than 55%.

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57. An IR and UV absorbing soda-lime-silica glass as claimed in claim ⁴³~~56~~, wherein
said ultraviolet radiation transmission is less than 50%.

⁴⁵
58. An IR and UV absorbing soda-lime-silica glass of a neutral tint having a base
glass composition comprising in percent by weight:

SiO ₂	65 - 80
Na ₂ O	10 - 20
CaO	5 - 15
MgO	0 - 10
Al ₂ O ₃	0 - 5
K ₂ O	0 - 15
BaO	0 - 5
B ₂ O ₃	0 - 5

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and traces of melting and refining ads, if any, and colorants consisting essentially of:

Fe₂O₃ (total iron) 0.3 - 0.7 weight percent;
Se 0.5 - 10 ppm;
Co₃O₄ 3 - 25 ppm;
TiO₂ 0 - 1.5 weight percent;
NiO 0-50 ppm; and
FeO content to provide a ratio of ferrous iron to total iron in the range of 21 to 34,

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come the glass having a visible light transmittance of at least 70%, a direct solar heat transmission at
least 12 percentage points below the visible light transmittance, a dominant wavelength not
greater than 560 nm and a color purity of no more than 6% at a nominal glass thickness of 4 mm.
